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RESPONSE UNDER 37 C.F.R. § 1.116
EXPEDITED PROCEDURE
EXAMINING GROUP 2800

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named
Inventor : Alexei V. Galatenko et al.

Appln. No.: 10/719,393

Filed : November 21, 2003

For : PROCESS AND APPARATUS FOR
PLACEMENT OF MEGACELLS IN ICs
DESIGN

Docket No.: 03-0937/L13.12-0257

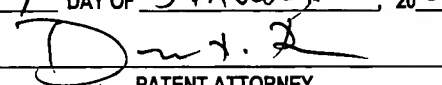
Group Art Unit: 2825

Examiner: Nghia M.
Doan

PRE-APPEAL BRIEF REQUEST FOR REVIEW

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Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

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PATENT ATTORNEY

Sir:

Applicant respectfully requests a Pre-Appeal Brief Review of the rejection of claims 1 and 11 under ¶102(e) based on Andreev et al. U.S. Pub. No. 2005/009165 ("Andreev"), since the rejection is based on clear error of fact and omission of essential elements to establish a prima facie rejection.

The rejection is unsupported by Andreev and is based on either a misreading of Andreev or a misapplication of Andreev to Applicants' claims.

A. Independent Claims 1 and 11

Independent claim 1 is directed to a process of positioning megacells that are included in an initial integrated circuit layout that violates design rules. The circuit layout has sides defining sides of a chip. The process includes the steps of "inflating a size of at least some of the megacells;" "placing the megacells in a footprint of the circuit to reduce placement

complexity;" and "permuting megacell placement to reduce placement complexity."

Independent claim 11 include similar limitations, which are recited in the context of a computer usable medium.

An example of "inflating a size" is described on page 6, line 24 to page 7, line 7. The "size" of the megacell is defined as relating to the "dimensions" $m \times n$ of the megacell. The act of "inflating" the size of the megacell is described as increasing the dimensions of the megacell to dimensions " $m' \times n'$ ". For example, the specification states on Page 7, lines 5-7, "[t]he inflation thus forms a larger megacell with dimensions $m' \times n'$ to provide enough space for wires."

B. Andreev Does Not Anticipate Inflating Cell Size

1. Andreev Moves (Does Not Inflate) Cells

Andreev discloses a process for using rectangles to evaluate free area on an integrated circuit and to adjust placement coordinates of cells or clusters of cells within those rectangles to achieve uniform free area/density of placed objects in the rectangle. (See e.g., Abstract, lines 1-3; §[0028]; claim 1).

The rectangle is used to define a region on the chip in which cells are placed and in which placement density can be evaluated. This rectangle can subsequently be divided. (Abstract).

Paragraph [0029] states, "The cells may become distributed non-uniformly across the chip. This means that some fragments of the chip may be empty, having no cells, whereas other fragments may be densely packed. The process of FIG. 4 executes movements of the cells and clusters . . ." (Emphasis added). Thus in the process of FIG. 4 adjustment of the cell coordinates moves the cells. It does not inflate the physical dimensions of the cells.

In FIG. 1, step 24 describes the purpose of FIG. 4 is

to "MAKE FREE AREA DENSITY UNIFORM (FIG. 4)."

In FIG. 4, steps 76 and 78 split rectangle R into rectangles R1 and R2 that have equal free areas (step 76), and divides rectangle R into rectangles R3 and R4 having equal areas occupied by non-fixed cells (step 78). FIG. 5 illustrates the divisions of the rectangle R based on unequal distribution of cells that are placed in the rectangle.

As described in paragraph [0035], the dimensions of these rectangles are compared (i.e. free area vs occupied area). If there is "an unequal distribution" (by comparing the rectangles), "the cell/cluster coordinates of [cells and clusters placed within] each rectangle R3 and R4 is adjusted" The "x coordinate of each cell/cluster" in each rectangle is changed per the equations in paragraphs [0035] and [0036]. Step 84 therefore moves the cells and cell clusters based on the relative areas of free space and occupied space reflected by the division of rectangles in steps 76 and 78.

Thus as stated in [0029], the process of FIG. 4 simply moves the cells and cell clusters. The physical dimensions of the cells are not changed. Rather, the cells are moved.

Andreev does not anticipate nor provide any mechanism whatsoever to inflate or in any manner change the physical dimensions of a megacell.

For a prior art reference to anticipate in terms of 35 U.S.C. §102, every element of the claimed invention must be identically shown in a single reference. In *re Bond*, 15 U.S.P.Q.2d 1566, 1567 (Fed. Cir. 1990) (emphasis added). "The identical invention must be shown in as complete detail as is contained in the . . . claim." *Richardson v. Suzuki Motor Co.*, 9 U.S.P.Q.2d 1913, 1920 (Fed. Cir. 1989); M.P.E.P. §2131.

The above requirements for anticipation are clearly not met with respect to "inflating a size of at least some of the megacells" in claim 1 and similarly claim 11 of the present

application.

2. Examiner's Interpretation Does Not Make Sense

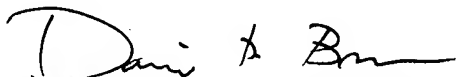
The Office Action's suggestion that Andreev discloses inflating a megacell size does not make sense in the context of moving cells to more evenly distribute free area. In the context of uniformly distributing free area, a person of ordinary skill in the art would not inflate the size of a megacell when trying to determine distribution of free area since the inflated megacell dimensions would no longer accurately reflect the actual area consumed by that megacell.

Since Andreev et al. do not anticipate each and every element of claims 1 and 11, Applicants respectfully request that the rejection under §102(e) be withdrawn.

The Director is authorized to charge any fee deficiency required by this paper or credit any overpayment to Deposit Account No. 12-2252.

Respectfully submitted,

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